



UNITED STATES PATENT AND TRADEMARK OFFICE

ms

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,460	10/11/2001	John Michael Brady	117-364	5345
23117	7590	11/28/2006		
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER DANG, DUY M	
			ART UNIT	PAPER NUMBER
			2624	

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,460

Applicant(s)

BRADY ET AL.

Examiner

Duy M. Dang

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/18/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 76,78,79,81,101-118,132 and 133 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 76,78 and 79 is/are allowed.
- 6) ☒ Claim(s) 81,101-103,105,107-109,111,113-115,117,118,132 and 133 is/are rejected.
- 7) ☒ Claim(s) 104,106,110,112 and 116 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/18/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendments filed on September 18, 2006 has been entered and made of record.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 107 and 111 are rejected under 35 U.S.C. 112, first paragraph, because of the reasons as follows:

It is noted that claim 107 is a single mean claim because it only recites a single mean that of "means for delimiting" in line 2. Therefore, claim 95 is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. See MPEP 2164.08(a). Furthermore, claim 11 is also a single means claim so claim 11 is rejected for the same reasons as set forth in claim 107.

4. Claims 132-133 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 132, it recites "Apparatus for calculating". However, this claim does not actually recite any apparatus/means/structure which comprise the "apparatus" in the preamble. Thus, the scope of this claim is not clear.

Claim 133 is also rejected for the same reasons as set forth in claim 132 above.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 81 and 113-118 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

*“Descriptive material can be characterized as either **functional descriptive material** or **nonfunctional descriptive material**. In this context, **functional descriptive material** consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993)). **Nonfunctional descriptive material** includes but is not limited to music, literary works and a compilation or mere arrangement of data.”*

*“When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having*

Art Unit: 2624

a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory))”.

“In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.”

In this case, claim 81 recites “A computer program storage medium” in line 1. The claimed “a computer program storage medium” does not necessarily invoke a “computer-readable storage medium/memory encoded with a computer program” and the claimed “program” is an abstract and intangible idea that is considered as a “functional descriptive material”. Any such functional descriptive material must be embodied on a computer-readable storage medium in order to meet 101 statutory. While claim 81 defines a storage medium and functional descriptive material but it does not define a computer-readable storage medium or memory encoded with a functional descriptive material or program and is thus non-statutory for that reason. That is, the scope of the presently claimed storage medium can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on “computer-readable storage medium” or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Art Unit: 2624

Each of claims 113-118 also recites "a computer program storage medium" in line 1.

Thus, claims 113-118 are also rejected for the same reasons as set forth in claim 81 above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

7. A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 101-103, 105, 107-109, 111, 113-115, and 117 are rejected under 35

U.S.C. 102(b) as being anticipated by Highnam et al. ("Computing the Scatter Component of Mammographic Images", IEEE, Transactions on Medical Imaging, Vol. 13, No. 2, June 1994, pages 301-313. Cited in the previous Office action. Referred as "Highnam" hereinafter).

Regarding claim 101, the Highnam teaches a method of calculating from a mammogram a compressed thickness of an imaged breast (see equation 1 depicted at the bottom of the right column of page 302 and figure 1 depicted in page 303) comprising: a step of delimiting in the mammogram a region corresponding to a part of the breast which is compressed from a region corresponding to an uncompressed breast edge by detecting smoothness of curves of equal intensity in the mammogram (see curves depicted in figure 1, and subsection B [Verification of Model] described in pages 308-311. Note that interesting tissue corresponds to the so called "delimiting in the mammogram a region....breast", the nipple shown in figure 9 refers to the so

Art Unit: 2624

called “breast edge”, the representation depicted in figure 13 refers to the “smoothness of curves of equal intensity (i.e., the same force compression applied to breast) in mammogram).

Highnam further teaches calculating thickness of fat in the breast and thickness of the compressed breast (see equation 1 shown in right column of page 302. Note H , h_{int} , and h_{fat}) as required by claims 102-103; wherein a predetermined smoothness threshold is set to detect smooth curves (50/50 ratio shown in figure 6) as required by claim 105.

Regarding claims 107 and 113, these claims are also rejected for the same reasons as set forth in claim 101 above.

Regarding claims 108-109, 111, 114-115, and 117, these claims are also rejected for the same reasons as set forth in claims 102-103 and 105 above.

Allowable Subject Matter

9. Claims 104, 106, 110, 112, and 116 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 76, and 78-79 are allowed.

Response to Arguments

11. Applicant's arguments filed on September 18, 2006 have been considered but are moot in view of the new ground(s) of rejection.

In view of Applicant's argument set forth in page 14 with regard to claim 78, the rejection of claim 78 has been withdrawn. As a result, claim 78 is allowed.

Art Unit: 2624

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy M. Dang whose telephone number is 571-272-7389. The examiner can normally be reached on Monday to Friday from 6:00AM to 2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dmd
11/06


DUY M. DANG
PRIMARY EXAMINER